

CUSTOMER SATISFACTION ANALYSIS “FEEDER WIRAWIRI SUROBOYO” PARK AND RIDE ROUTE MAYJEND SUNKONO–CITY HALL USING CSI AND IPA METHODS

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ABSTRACT

Surabaya, as one of the big cities in Indonesia, experiences significant challenges in transportation due to rapid growth of infrastructure and population. One of the government's efforts to overcome this problem is by launching Feeder Wirawiri Suroboyo, an integrated public transportation service that supports mass transportation modes in Surabaya. This study aims to analyze the characteristics and level of customer satisfaction using the Customer Satisfaction Index (Satisfaction) and Importance Performance Analysis (Importance) methods. The results of the analysis obtained the characteristics of the average passenger is male, aged <17 years and 18-28 years with a last education of high school or equivalent who are students with income <Rp. 2,000,000 who use Feeder Wirawiri Suroboyo Park and Ride route Mayjend Sungkono-City Hall with the purpose of traveling for School/College. The satisfaction level is 93.78%, which means it is included in the very satisfied category, while the suitability level is 95.68%, which is then calculated as the average score of the suitability level to be analyzed using the Cartesian Diagram.

Keywords: *Wirawiri Suroboyo Feeder; Customer Statistics Index; Importance Performance Analysis.*

1. Introduction

Surabaya, as the capital of East Java Province, is one of the metropolitan cities in Indonesia that continues to grow rapidly. This development can be seen from the increasing number of infrastructures such as roads, high-rise buildings, and other public facilities. Along with this development, the population also continues to grow, which in turn causes various problems, especially in the transportation sector. One of the main impacts of this growth is the increase in traffic congestion which affects various aspects of people's lives, including mobility efficiency, productivity, and environmental quality due to increased pollution [1].

Public transportation in Surabaya still faces various challenges, especially in terms of service and coverage. Many people prefer to use private vehicles because public transportation is considered less comfortable, less efficient, and does not meet their mobility needs. To overcome these challenges, the Surabaya City Government launched the Feeder Wirawiri Suroboyo in 2023. This transportation is designed as an innovative solution by integrating small-capacity feeder transportation modes with mass transportation modes such as Suroboyo Bus and Trans Semanggi Suroboyo [2].

Feeder Wirawiri Suroboyo has advantages in the form of modern facilities, strategic routes, and non-cash payments. However, this service still faces several obstacles, such as the low number of passengers on some routes and the uneven coverage of services to areas with dense activity. In

addition, there is criticism of operational management, marketing strategies that are considered less than optimal and implementation standards that are not implemented properly such as in the journal Implementation of the Wira-wiri Suroboyo Program at the Surabaya City Transportation Agency, it is known that there are implementation standards regarding mandatory non-cash payments with the aim of making it easier for crews and passengers and avoiding illegal levies from crews, but in reality many passengers find it difficult with these standards, especially passengers who are not very good at using smartphones who complain why cash payments are not provided as well to make it easier for mothers and fathers because they cannot use this transportation if they are not with their children who are good at using smartphones [3].

Therefore, an in-depth evaluation of the level of customer satisfaction is needed to determine whether this service has met the needs and expectations of the community. This study aims to analyze customer satisfaction of Feeder Wirawiri Suroboyo using the Customer Satisfaction Index (CSI) and Importance Performance Analysis (IPA) methods. The results of this study are expected to provide strategic recommendations to the Surabaya City Government to improve service quality, attract more users, and gradually reduce public dependence on private vehicles.

2. Materials and Methods

This research was conducted in the Feeder Wirawiri Suroboyo on the Mayjend Sungkono–City Hall Park and Ride route which is the quietest route among the other routes for 2 weeks. In the data analysis, primary data and secondary data were used using quantitative descriptive methods to describe customer characteristics, measure their level of satisfaction, and analyze the performance of the Feeder Wirawiri Suroboyo service on the Mayjend Sungkono–City Hall Park and Ride route based on two main methods, namely the Customer Satisfaction Index (CSI) which focuses on overall research of user experience and Importance Performance Analysis (IPA) which measures how important and how good an attribute is for customers. With CSI, it can help provide a general picture of customer satisfaction, while with IPA, it can provide in-depth insights into specific improvements based on the importance of each attribute assessed by customers.

2.1. Survey Method

The survey was only permitted to be conducted for 2 weeks by the Surabaya City Transportation Agency on Monday, Friday and Saturday in the first week and Wednesday, Friday and Sunday in the second week which was carried out at 07.00–09.00, 12.00–13.00 and 16.00–18.00 WIB inside the Wirawiri Suroboyo Feeder on the Mayjend Sungkono–City Hall Park and Ride route by distributing questionnaires to users.

2.2. Data Type

The data used in this study are primary data obtained from a respondent survey by distributing 100 questionnaires to users of the Wirawiri Suroboyo Feeder public transportation service on the Mayjend Sungkono–City Hall Park and Ride route and secondary data obtained through operational reports provided by the UPTD Wirawiri Suroboyo Feeder.

2.3. Data Processing Techniques

The data collected from the questionnaire was then analyzed using IBM SPSS Statistics software and Microsoft Excel. The analysis carried out was:

- a. Validity test, conducted to ensure that the questions in the questionnaire are in accordance with the attributes to be measured. An item can be declared valid if the calculated correlation value (r count) is obtained $>$ the table correlation value (r table) [4].
- b. Reliability test, conducted using Cronbach's Alpha to measure the internal consistency of the questionnaire instrument. Alpha value $>$ 0.90 then the reliability is perfect; if the Alpha value is 0.70-0.90 then the reliability is high; if the Alpha value is 0.50-0.70 then the reliability is moderate and if the Alpha value $<$ 0.50 then the reliability is low [5].

2.4. Research methods

After the data is analyzed for validity and reliability, the data is then analyzed using two main methods, namely:

- a. Customer Satisfaction Index (CSI) method, is used to measure the overall level of customer satisfaction. CSI is calculated based on the sum of the average satisfaction ratings of all attributes studied, then calculated in percentage form with a value range of 0 to 100%. The higher the CSI value, the better the level of customer satisfaction with the services provided [6].
- b. Importance Performance Analysis (IPA) method, is used to analyze the difference between the importance of an attribute to users and the actual performance of the attribute in the service. The results of IPA help in identifying factors that need to be improved to increase customer satisfaction. The evaluated attributes will be grouped into four quadrants, each of which indicates the priority of improvement and areas that need to be maintained [7].

2.5. Data analysis

1. In determining the sample size [8], you can use the following equation:

$$n = \left[\frac{N}{1 + Ne^2} \right] \quad (1)$$

Where:

n = population size

N= number of samples

e = standard error (10% error rate)

2. Validity testing is carried out by looking for the correlation of each question with the overall score using the Pearson Product Moment correlation technique equation , as follows:

$$r = \frac{N(\sum_{i=1}^N X_i Y_i) - (\sum_{i=1}^N X_i)(\sum_{i=1}^N Y_i)}{\sqrt{[N \sum_{i=1}^N X_i^2 - (\sum_{i=1}^N X_i)^2][N \sum_{i=1}^N Y_i^2 - (\sum_{i=1}^N Y_i)^2]}} \quad (2)$$

Where:

r = Pearson Product Moment correlation coefficient

X= score for each question

Y= overall score

N= number of respondents

3. The reliability testing of the instrument uses the Cronbach Alpha Equation, because the research instrument is in the form of a questionnaire and a graded scale. The Cronbach Alpha Equation is as follows:

$$r_{11} = \left(\frac{n}{n-1} \right) \left(1 - \frac{\sum \sigma^2}{\sigma^2} \right) \quad (3)$$

Where:

r11 = reliability sought

n = number of question items tested

$\sum \sigma^2$ = the sum of the score variants of each item

σ^2 = total variance

4. According to Bhote (1996), in calculating the level of customer satisfaction using the Customer Statistics Index (CSI) method, the overall level is illustrated in the following table:

Table 1. Customer Statistics Index (CSI)

Attributes	Interest (I)	Statistic (P)	Score (S)
	Scale 1-5	Scale 1-5	(S) = (I) x (P)
.....			
Total Score	Total (I) = (Y)		Total (S) = (T)

Source: UPGRIS Informatics Journal Vol. 4, no. 1, 2018

The Customer Statistics Index (CSI) is then calculated using the equation as follows:

$$CSI = \frac{T}{5Y} \times 100\% \quad (4)$$

Where:

T = total value of CSI

5 = maximum value on the measurement scale

Y = total value of the expectation column

From the calculation results according to equation 4, they are then analyzed according to the satisfaction level criteria in the CSI method [9], the criteria are as follows:

Table 2. Satisfaction Level Criteria

No.	CSI Value (%)	Information (CSI)
1	81%-100%	Very Satisfied
2	66%-80.99%	Satisfied
3	51%-65.99%	Quite Satisfied
4	35%-50.99%	Less Satisfied
5	0%-34.99%	Not Satisfied

Source: UPGRIS Informatics Journal Vol. 4, no. 1, 2018

- In analyzing data using the Importance Performance Analysis method, the suitability value between the level of importance and the level of performance is calculated. The equation used is:

$$TK_i = \frac{X_i}{Y_i} \times 100\% \quad (5)$$

Where:

TK_i = respondent suitability level

X_i = performance level score

Y_i = importance level score

Next, calculate the average level of performance and level of importance using the following equation:

$$\bar{X} = \frac{\sum X_i}{n} \quad (6)$$

$$\bar{Y} = \frac{\sum Y_i}{n} \quad (7)$$

Where:

$\bar{X}$ = average score of performance level

$\bar{Y}$ = average score of level of importance

$\sum X_i$ = total number of performance scores

$\sum Y_i$ = total number of importance scores

n = number of respondents

After that, the average of the average score of the performance level and the level of importance is calculated using the equation, namely:

$$\bar{\bar{X}} = \frac{\sum_{i=1}^n \bar{X}_i}{k} \quad (8)$$

$$\bar{\bar{Y}} = \frac{\sum_{i=1}^n \bar{Y}_i}{k} \quad (9)$$

Where:

K = the number of attributes or service statements in the questionnaire given to respondents

The interpretation of the Importance Performance Analysis (IPA) is presented in the form of a Cartesian Diagram which has four quadrants which will be shown in the Importance Performance Analysis Quadrant [10], as follows:

I M P O R T A N C E	Quadran I <i>Concentrate Here</i> High Importance Low Performance	Quadran II <i>Keep Up the Good Work</i> High Importance High Performance
	Quadran III <i>Low Priority</i> Low Importance Low Performance	Quadran IV <i>Possible Overkill</i> Low Importance High Performance
	PERFORMANCE	

Figure 1. Quadrant Importance Performance Analysis

Source: Journal of the Faculty of Economics and Business, Brawijaya University, 2018

3. Results and Discussion

Based on the research that has been conducted for 2 weeks in the Wirawiri Suroboyo Feeder on the Mayjend Sungkono-City Hall Park and Ride route, data was obtained through the UPTD Wirawiri Suroboyo Feeder Office and also through the distribution of questionnaires, which data was then analyzed to obtain passenger characteristics and customer satisfaction. The following are the results of the data analysis that has been carried out.

3.1. Passenger Data for the Last Year

Obtained through the UPTD Feeder Wirawiri Suroboyo Office. The data on the number of passengers for the last year for the Feeder Wirawiri Suroboyo route Park and Ride Mayjend Sungkono-City Hall is presented in graphic form, as follows:

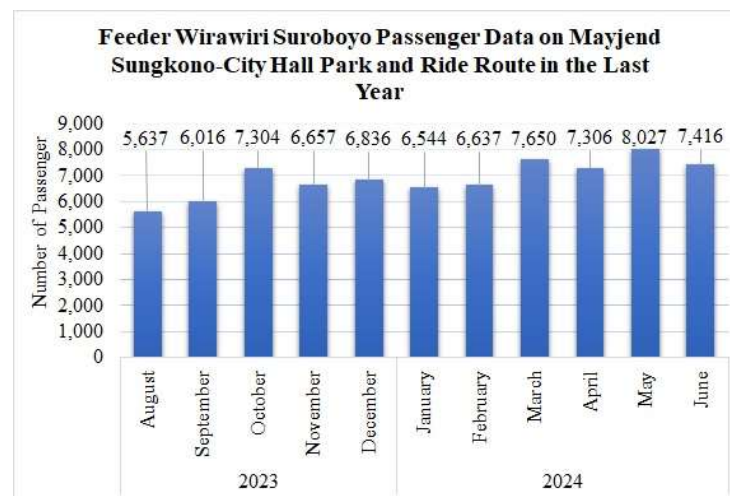


Figure 2. Passengers Data for The Last Year

Source: UPTD Office Feeder Wirawiri Surabaya

3.2. Passenger Characteristics

From the questionnaire that has been distributed, some passenger personal data were obtained which were then analyzed to obtain the characteristics of Feeder Wirawiri Suroboyo passengers on the Park and Ride Mayjend Sungkono-City Hall route. The characteristics of passengers based on the results of the analysis are:

Table 3. Passenger Characteristics

Characteristics	Dominant Characteristics	Percentage (%)	Amount (Person)
Gender	Male	55%	55
Age	< 17 years	30%	30
	18-28 years	30%	30
Last Education	Senior High School	56%	56
Job	Student/College Student	52%	52
Income	< Rp. 2,000,000	53%	53
Travel Destination	School/College	32%	32

Source: Data Analysis, 2024

3.3. Validity Test

In the calculation of this test, Microsoft Excel and SPSS applications are used as tools. The survey data is tested with a value ($N = 100 = 10\%$) with r table 0.165 as a critical number. The results of the validity test are: α

Table 4. Validity Test Results Based on Customer Satisfaction

	Code	Attribute	r count	r table	Condition	Information
Tangibles	A1	Travel time	0.616	0.165	$r \text{ count} > r \text{ table}$	Valid
	A2	Waiting time for arrival of Wirawiri Suroboyo Feeder	0.627	0.165	$r \text{ count} > r \text{ table}$	Valid
	A3	Rates/fees given	0.322	0.165	$r \text{ count} > r \text{ table}$	Valid
	A4	Cleanliness of Wirawiri Suroboyo Feeder	0.445	0.165	$r \text{ count} > r \text{ table}$	Valid
	A5	Condition of facilities and infrastructure in the Wirawiri Suroboyo Feeder	0.450	0.165	$r \text{ count} > r \text{ table}$	Valid
Reliability	B1	Accuracy of departure and arrival times	0.667	0.165	$r \text{ count} > r \text{ table}$	Valid
	B2	Passenger carrying capacity	0.710	0.165	$r \text{ count} > r \text{ table}$	Valid
Responsiveness	C1	Availability of information	0.526	0.165	$r \text{ count} > r \text{ table}$	Valid
	C2	Availability to help customers when they experience difficulties	0.541	0.165	$r \text{ count} > r \text{ table}$	Valid
	C3	Availability to respond to complaints and feedback	0.737	0.165	$r \text{ count} > r \text{ table}$	Valid
Assurance	D1	Safety and comfort in the Wirawiri Suroboyo Feeder	0.675	0.165	$r \text{ count} > r \text{ table}$	Valid
	D2	Passenger safety	0.724	0.165	$r \text{ count} > r \text{ table}$	Valid

Source: Data Analysis, 2024

Continued Table 4. Validity Test Results Based on Customer Satisfaction

	Code	Attribute	r count	r table	Condition	Information
Empathy	E1	Be polite and friendly	0.625	0.165	r count > r table	Valid
	E2	The officer said thank you at the end of the service	0.667	0.165	r count > r table	Valid
	E3	Officer's concern for customers	0.658	0.165	r count > r table	Valid

Source: Data Analysis, 2024

Here is an example of a calculation from one of the questions:

$$r = \frac{N(\sum_{i=1}^N X_i Y_i) - (\sum_{i=1}^N X_i \sum_{i=1}^N Y_i)}{\sqrt{[N \sum_{i=1}^N X_i^2 - (\sum_{i=1}^N X_i)^2][N \sum_{i=1}^N Y_i^2 - (\sum_{i=1}^N Y_i)^2]}}$$

$$r = \frac{100(28431) - (421 \times 6718)}{\sqrt{[100 \times 1799 - (421)^2][100 \times 453490 - (6718)^2]}}$$

where the result > r table = 0.165 $r = 0.616$

Because r count = 0.616 > r table = 0.165, the result is valid.

Table 5. Validity Test Results Based on Customer Interest

	Code	Attribute	r count	r table	Condition	Information
Tangibles	A1	Travel time	0.405	0.165	r count > r table	Valid
	A2	Waiting time for arrival of Wirawiri Suroboyo Feeder	0.426	0.165	r count > r table	Valid
	A3	Rates/fees given	0.517	0.165	r count > r table	Valid
	A4	Cleanliness of Wirawiri Suroboyo Feeder	0.717	0.165	r count > r table	Valid
	A5	Condition of facilities and infrastructure in the Wirawiri Suroboyo Feeder	0.624	0.165	r count > r table	Valid
Reliability	B1	Accuracy of departure and arrival times	0.495	0.165	r count > r table	Valid
	B2	Passenger carrying capacity	0.489	0.165	r count > r table	Valid
Responsiveness	C1	Availability of information	0.582	0.165	r count > r table	Valid
	C2	Availability to help customers when they experience difficulties	0.583	0.165	r count > r table	Valid
	C3	Availability to respond to complaints and feedback	0.751	0.165	r count > r table	Valid

Source: Data Analysis, 2024

Continued Table 5. Validity Test Results Based on Customer Interest

	Code	Attribute	r count	r table	Condition	Information
Assurance	D1	Safety and comfort in the Wirawiri Suroboyo Feeder	0.665	0.165	r count > r table	Valid
	D2	Passenger safety	0.722	0.165	r count > r table	Valid
Empathy	E1	Be polite and friendly	0.688	0.165	r count > r table	Valid
	E2	The officer said thank you at the end of the service	0.696	0.165	r count > r table	Valid
	E3	Officer's concern for customers	0.679	0.165	r count > r table	Valid

Source: Data Analysis, 2024

Here is an example of a calculation from one of the questions that was asked:

$$r = \frac{N(\sum_{i=1}^N X_i Y_i) - (\sum_{i=1}^N X_i \sum_{i=1}^N Y_i)}{\sqrt{[N \sum_{i=1}^N X_i^2 - (\sum_{i=1}^N X_i)^2][N \sum_{i=1}^N Y_i^2 - (\sum_{i=1}^N Y_i)^2]}}$$

$$r = \frac{100(30277) - (430 \times 7021)}{\sqrt{[100 \times 1876 - (430)^2][100 \times 494645 - (7021)^2]}}$$

$$> r \text{ table} = 0.165 \quad r = 0.405$$

Because r count = 0.405 > r table = 0.165, the result is valid.

3.4. Reliability Test

In the calculation of this test also uses Microsoft Excel and SPSS applications as tools. The following are the results of the reliability analysis that has been carried out:

Table 6. Reliability Test Results Based on Passenger Satisfaction

	Code	Attribute	Mark
Tangibles	A1	Travel time	0.269
	A2	Waiting time for arrival of Wirawiri Suroboyo Feeder	0.297
	A3	Rates/fees given	0.127
	A4	Cleanliness of Wirawiri Suroboyo Feeder	0.244
	A5	Condition of facilities and infrastructure in the Wirawiri Suroboyo Feeder	0.210
Reliability	B1	Accuracy of departure and arrival times	0.311
	B2	Passenger carrying capacity	0.309

Source: Data Analysis, 2024

Continued Table 6. Reliability Test Results Based on Passenger Satisfaction

	Code	Attribute	Mark
Responsiveness	C1	Availability of information	0.277
	C2	Availability to help customers when they experience difficulties	0.244
	C3	Availability to respond to complaints and feedback	0.275
Assurance	D1	Safety and comfort in the Wirawiri Suroboyo Feeder	0.331
	D2	Passenger safety	0.292
Empathy	E1	Be polite and friendly	0.261
	E2	The officer said thank you at the end of the service	0.290
	E3	Officer's concern for customers	0.253
Amount			3.988

Source: Data Analysis, 2024

The results of the reliability test are used to find the Alpha value as follows:

$$r_{11} = \left(\frac{n}{n-1} \right) \left(1 - \frac{\sum \sigma^2}{\sigma^2} \right)$$

$$r_{11} = \left(\frac{15}{15-1} \right) \left(1 - \frac{3.988}{21.967} \right)$$

$$r_{11} = 0.877$$

The Alpha value obtained is 0.877, where the Alpha value is between 0.70-0.90, so it can be concluded that the reliability results are high so that the level of importance expected by passengers is reliable.

Table 7. Reliability Test Results Based on Passenger Interests

	Code	Attribute	Mark
Tangibles	A1	Travel time	0.273
	A2	Waiting time for arrival of Wirawiri Suroboyo Feeder	0.293
	A3	Rates/fees given	0.142
	A4	Cleanliness of Wirawiri Suroboyo Feeder	0.210
	A5	Condition of facilities and infrastructure in the Wirawiri Suroboyo Feeder	0.183
Reliability	B1	Accuracy of departure and arrival times	0.270
	B2	Passenger carrying capacity	0.328

Source: Data Analysis, 2024

Continued Table 7. Reliability Test Results Based on Passenger Interests

	Code	Attribute	Mark
Responsiveness	C1	Availability of information	0.210
	C2	Availability to help customers when they experience difficulties	0.163
	C3	Availability to respond to complaints and feedback	0.225
Assurance	D1	Safety and comfort in the Wirawiri Suroboyo Feeder	0.189
	D2	Passenger safety	0.127
Empathy	E1	Be polite and friendly	0.234
	E2	The officer said thank you at the end of the service	0.228
	E3	Officer's concern for customers	0.202
Amount			3.275

Source: Data Analysis, 2024

From the results of the reliability test, the Alpha value is calculated as follows:

$$r_{11} = \left(\frac{n}{n-1} \right) \left(1 - \frac{\sum \sigma^2}{\sigma^2} \right)$$

$$r_{11} = \left(\frac{15}{15-1} \right) \left(1 - \frac{3.275}{17.178} \right)$$

$$r_{11} = 0.809$$

The Alpha value obtained is 0.809, where the Alpha value is between 0.70-0.90, so it can be concluded that the reliability results are high so that the level of importance expected by passengers is reliable.

3.5. Customer Satisfaction Index (CSI) Method Test

Based on the survey data obtained through the distributed questionnaire, the survey results were then processed using the CSI method, as follows:

Table 8. Data Analysis using the CSI Method

Code	Attribute	Satisfaction (I)	Interest (P)	Score (S)
		Scale 1-5	Scale 1-5	(S)=(I)*(P)
A1	Travel time	4.21	4.30	18.103
A2	Waiting time for arrival of Wirawiri Suroboyo Feeder	4.19	4.30	18,017
A3	Rates/fees given	4.88	4.86	23,717
A4	Cleanliness of Wirawiri Suroboyo Feeder	4.72	4.82	22,750
A5	Condition of facilities and infrastructure in the Wirawiri Suroboyo Feeder	4.75	4.83	22,943

Source: Data Analysis, 2024

Continued Table 8. Data Analysis using the CSI Method

Code	Attribute	Satisfaction (I)	Interest (P)	Score (S)
		Scale 1-5	Scale 1-5	(S)=(I)*(P)
B1	Accuracy of departure and arrival times	4.25	4.35	18,488
B2	Passenger carrying capacity	4.21	4.34	18,271
C1	Availability of information	4.31	4.75	20,473
C2	Availability to help customers when they experience difficulties	4.72	4.83	22,798
C3	Availability to respond to complaints and feedback	4.26	4.76	20,278
D1	Safety and comfort in the Wirawiri Suroboyo Feeder	4.55	4.82	21,931
D2	Passenger safety	4.53	4.88	22,106
E1	Be polite and friendly	4.61	4.78	22,036
E2	The officer said thank you at the end of the service	4.35	4.79	20,837
E3	Officer's concern for customers	4.64	4.80	22,272
Total Score		67.18	70.21	315,018

Source: Data Analysis, 2024

From the data above, it can be seen that the value (I) is the variable felt by passengers (satisfaction), the value (P) is the variable expected by passengers (importance) and the value (S) is the average score result. Furthermore, the data is tested using the CSI method, as follows:

$$CSI = \frac{T}{5Y} \times 100\%$$

$$CSI = \frac{315.018}{5(67.18)} \times 100\%$$

$$CSI = 93.78\%$$

The CSI value obtained was 93.78%, with this it can be concluded according to Table 2. Satisfaction Level Criteria, then the results are included in the Very Satisfied category.

3.6. Importance Performance Analysis (IPA) Method Test

The survey data that has been obtained will also be analyzed using the IPA method. The following survey data will be analyzed:

Table 9. Data Analysis using the IPA Method

Code	Attribute	Satisfaction	Interest
		Xi	Yes
A1	Travel time	421	430
A2	Waiting time for arrival of Wirawiri Suroboyo Feeder	419	430

Source: Data Analysis, 2024

Continued Table 9. Data Analysis using the IPA Method

Code	Attribute	Satisfaction	Interest
		Xi	Yes
A3	Rates/fees given	488	486
A4	Cleanliness of Wirawiri Suroboyo Feeder	472	482
A5	Condition of facilities and infrastructure in the Wirawiri Suroboyo Feeder	475	483
B1	Accuracy of departure and arrival times	425	435
B2	Passenger carrying capacity	421	434
C1	Availability of information	431	475
C2	Availability to help customers when they experience difficulties	472	483
C3	Availability to respond to complaints and feedback	426	476
D1	Safety and comfort in the Wirawiri Suroboyo Feeder	455	482
D2	Passenger safety	453	488
E1	Be polite and friendly	461	478
E2	The officer said thank you at the end of the service	435	479
E3	Officer's concern for customers	464	480
Total		6718	7021

Source: Data Analysis, 2024

From the data above, it can be used to calculate the level of conformity per attribute item. As an example of calculation, here is the calculation of the level of conformity of one attribute:

$$Tk_i = \frac{X_i}{Y_i} \times 100\%$$

$$Tk_i = \frac{421}{430} \times 100\%$$

$$Tk_i = 97,91\%$$

After each attribute item has its conformity level value, then the total conformity level calculation is carried out. Here is an example of the calculation, as follows:

$$\sum X_i = 6718$$

$$\sum Y_i = 7021$$

$$Tk_i \text{ Total} = \frac{\sum X_i}{\sum Y_i} \times 100\%$$

$$Tk_i \text{ Total} = \frac{6718}{7021} \times 100\%$$

$$Tk_i \text{ Total} = 95,68\%$$

After obtaining the total conformity level value, the average score is calculated from the total conformity level, both from the satisfaction level and the level of importance. Here is an example of the calculation:

$$\begin{aligned}\bar{X} &= \frac{\sum_{i=1}^n \bar{X}_i}{k} \\ &= \frac{67,18}{15} \\ \bar{X} &= 4,48\end{aligned}$$

$$\begin{aligned}\bar{Y} &= \frac{\sum_{i=1}^n \bar{Y}_i}{k} \\ &= \frac{70,21}{15} \\ \bar{Y} &= 4,68\end{aligned}$$

After the average score of the total level of conformity has been obtained, a Cartesian Diagram is then made from each attribute item that has been analyzed. The following are the results of the Cartesian Diagram from each attribute item that has been analyzed:

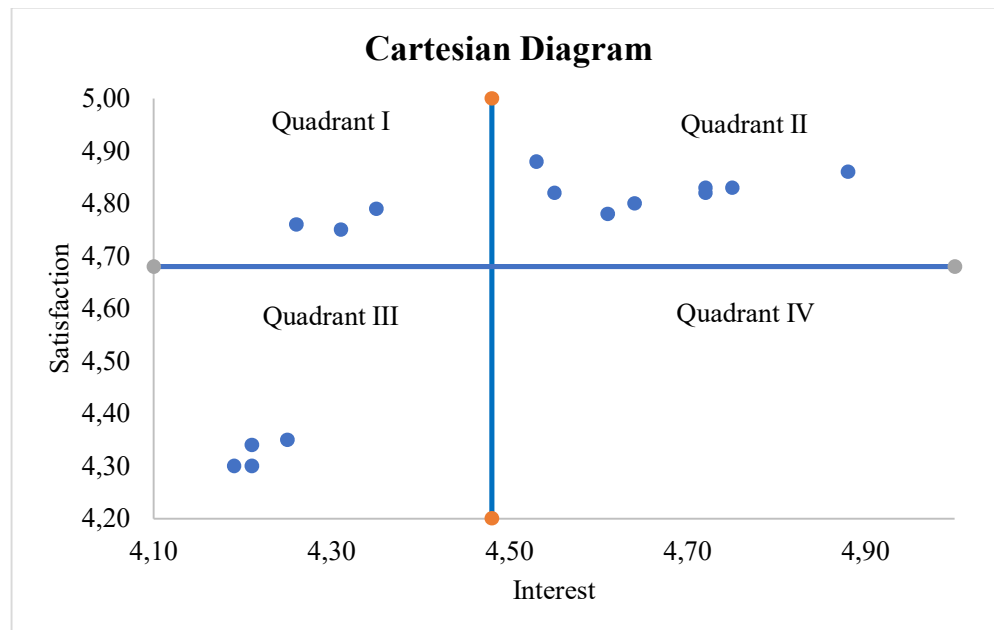


Figure 3. Cartesian Diagram

Source: Data Analysis, 2024

From the Cartesian Diagram above, it is concluded which attributes are in Quadrants I, II, III and IV. The conclusion table is as follows:

Table 10. Cartesian Diagram Conclusion

Cartesian Diagram Conclusion	
Quadrant I	8, 10, 14
Quadrant II	3, 4, 5, 9, 11, 12, 13, 15
Quadrant III	1, 2, 6, 7
Quadrant IV	-

Source: Data Analysis, 2024

From Table 10. Cartesian Diagram Conclusion It can be concluded that the attributes in Quadrant I are attributes that are felt to be very important for respondents, but the level of performance is quite

low. For attributes in Quadrant II are attributes that are felt to be very important for respondents and the level of performance is also high, so they must be maintained. While for attributes in Quadrant III, they are attributes that are at a low level of importance and a low level of performance, so they do not need to be considered too much. The criteria for each Quadrant are in accordance with Figure 1. Quadrant Importance Performance Analysis.

Based on the results obtained with the high level of user satisfaction with the Wirawiri Suroboyo Feeder on the Mayjend Sungkono-City Hall Park and Ride route and the many facilities that have met the standards of conformity expected by passengers, then according to the transportation policy in Surabaya regarding Public Transportation Development by launching the Wirawiri Suroboyo Feeder, especially on the Mayjend Sungkono-City Hall Park and Ride route, it is quite good, although there are still several things that need to be considered, fixed and developed such as attributes in Quadrant I.

4. Conclusions

Based on the background of the problems that occurred related to the Wirawiri Suroboyo Feeder on the Mayjend Sungkono-City Hall Park and Ride route and after conducting a satisfaction survey which was then analyzed using two methods, namely the Customer Satisfaction Index (CSI) method and the Importance Performance Analysis (IPA) method, the following conclusions can be drawn: Based on the analysis of passenger characteristics, it was found that the average male passenger aged <17 years and 18-28 years with a high school or equivalent education who is a student with an income of <Rp. 2,000,000 who uses the Wirawiri Suroboyo Feeder on the Mayjend Sungkono-City Hall Park and Ride route to travel for school/college.

In terms of satisfaction, through the results of the analysis using the CSI method, it can be seen that passengers are very satisfied with the services and facilities of the Wirawiri Suroboyo Feeder on the Mayjend Sungkono-Balai Kota route, so that the CSI value reaches 93.78% and is included in the very satisfied category. Meanwhile, in terms of the level of suitability, it can be seen from the results of the analysis using the IPA method that there are more attributes in Quadrant II, namely 8 items on the Cartesian Diagram, which means that there are already many facilities and services that have met the standards of suitability expected by passengers.

With this thesis, the author hopes that it can be developed by subsequent authors so that they can further perfect this thesis and can analyze the things that have been reviewed using other methods.

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